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**Fire Regime Condition Class (FRCC) Interagency Handbook  
Reference Conditions**

**Modeler:** Kenneth W. Outcalt

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**PNVG Code:** SPSC

**Potential Natural Vegetation Group:** Sand Pine Scrub

**Geographic Area:** Florida central ridge and a strip of old dunes stretching from St. John's County south to the northern portion of Dade County on the east coast and from near Cedar Key south to Naples on the west coast.

**Description:** This PNVG is for scrub dominated by the Ocala variety (*Pinus clausa* var. *clausa* D.B. Ward) of sand pine that is native to the gently rolling hills of deep droughty infertile sands of marine and aeolian origin. The area has hot, humid summers, somewhat dry winters, a long growing season, and abundant precipitation, 53 to 60in per year (1345 to 1525mm). However, because of the low moisture-holding capacity of the soils, drought conditions can exist within 2 weeks of a heavy rainfall. Surface temperatures of exposed soils can also be extreme. Ocala sand pine forests have an overstory of even-aged sand pine with twisted and leaning trunks growing over an understory of evergreen shrubs. Typical understory species include myrtle oak (*Quercus myrtifolia*), sand live oak (*Q. geminata*), Chapman's oak (*Q. chapmanii*), turkey oak (*Q. laevis*), rusty lyonia (*Lyonia ferruginea*), rosemary (*Ceratiola ericoides*), scrub palmetto (*Sabal etonia*), and saw palmetto (*Serenoa repens*). Herbs and grasses are very sparse in mature scrub habitats, but lichens (*Cladonia* spp.) can form extensive patches on the forest floor.

**Fire Regime Description:** Fire Regimes II and IV; primarily stand replacement fires from 10 to 45 years but some fires occur at shorter or longer intervals. Because of its sparse ground cover and compacted litter layer, most of the time Ocala sand pine scrub will not burn. Periodically, every 10 to 100 years, usually during the spring drought, high winds and extreme conditions result in a high intensity passive crown fire that burns off the understory, kills the sand pine overstory, and opens the many serotinous cones contained in its crowns.

**Vegetation Type and Structure**

Class	Percent of Landscape	Description
A: post replacement	12	Post-fire, shrub dominated with sand pine seedlings.
B: mid-development closed	53	Sapling to pole sized sand pine with > 40 % canopy cover
C: mid-open	9	Sapling to pole sized sand pine with < 40 % canopy cover. Much of the area dominated by mid and understory oaks.
D: late -open	10	Mature sawtimber sized sand pine with < 40% canopy cover. Scattered seedling to pole sized sand pine in openings created by mature sand pine mortality. Much of area dominated by midstory oaks.
E: late-closed	16	Mature sawtimber sized sand pine with > 40% canopy cover. Scattered seedling to pole sized sand pine in openings created by mature sand pine mortality. Scattered larger oaks.
Total	100	

**Fire Frequency and Severity**

Fire Severity	Fire Frequency (yrs)	Probability	Percent, All Fires	Description
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Replacement Fire	45	0.022	92	Stand replacement fires occur in B, C, D, and E, which sends areas to A. Mosaic fires in A kill some sand pine before it is old enough to have seeds stored in cones, which sends areas along alternate pathway to C. Mosaic fire can also occur in D.
Non-Replacement Fire	500	0.002	8	
All Fire Frequency*	42	0.024	100	

\*All Fire Probability = sum of replacement fire and non-replacement fire probabilities. All Fire Frequency = inverse of all fire probability (previous calculation).

**Assumptions:** Older open stands have too little shed seed to generate enough seedlings for stands to become closed in with a canopy cover of sand pine greater than 40%. Once trees get older than 50 years, significant mortality due to root disease will occur. This will result in closed stands of phase E converting to open stands of phase D.

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### Personal Communication:

Janet Hinchee, USDA Forest Service, Ocala National Forest, Umatilla, FL.

## VDDT File Documentation

Include screen captures (print-screens) from any of the VDDT graphs that were used to develop reference conditions.











